BANK OF CANADA
BANQUE DU CANADA

MONETARY POLICY REPORT

October 2016

Canada's Inflation-Control Strategy[1]

Inflation targeting and the economy

- The Bank's mandate is to conduct monetary policy to promote the economic and financial well-being of Canadians.
- Canada's experience with inflation targeting since 1991 has shown that the best way to foster confidence in the value of money and to contribute to sustained economic growth, employment gains and improved living standards is by keeping inflation low, stable and predictable.
- In 2011, the Government and the Bank of Canada renewed Canada's inflation-control target for a further five-year period, ending 31 December 2016. The target, as measured by the total consumer price index (CPI), remains at the 2 per cent midpoint of the control range of 1 to 3 per cent.

The monetary policy instrument

- The Bank carries out monetary policy through changes in the target overnight rate of interest.[2] These changes are transmitted to the economy through their influence on market interest rates, domestic asset prices and the exchange rate, which affect total demand for Canadian goods and services. The balance between this demand and the economy's production capacity is, over time, the primary determinant of inflation pressures in the economy.
- Monetary policy actions take time—usually from six to eight quarters—to work their way through the economy and have their full effect on inflation. For this reason, monetary policy must be forward-looking.
- Consistent with its commitment to clear, transparent communications, the Bank regularly reports its perspective on the forces at work on the economy and their implications for inflation. The *Monetary Policy Report* is a key element of this approach. Policy decisions are typically announced on eight pre-set days during the year, and full updates of the Bank's outlook, including risks to the projection, are published four times per year in the *Monetary Policy Report*.

Inflation targeting is *symmetric* and *flexible*

- Canada's inflation-targeting approach is *symmetric*, which means that the Bank is equally concerned about inflation rising above or falling below the 2 per cent target.
- Canada's inflation-targeting framework is *flexible*. Typically, the Bank seeks to return inflation to target over a horizon of six to eight quarters. However, the most appropriate horizon for returning inflation to target will vary depending on the nature and persistence of the shocks buffeting the economy.

Monitoring inflation

- In the short run, a good deal of movement in the CPI is caused by fluctuations in the prices of certain volatile components (e.g., fruit and gasoline) and by changes in indirect taxes. For this reason, the Bank also monitors a set of "core" inflation measures, for example, the CPIX, which strips out eight of the most volatile CPI components and the effect of indirect taxes on the remaining components. These "core" measures allow the Bank to "look through" temporary price movements and focus on the underlying trend of inflation. In this sense, core inflation is monitored as an *operational guide* to help the Bank achieve the total CPI inflation target. It is not a replacement for it.

1 See *Joint Statement of the Government of Canada and the Bank of Canada on the Renewal of the Inflation-Control Target* (8 November 2011) and *Renewal of the Inflation-Control Target: Background Information—November 2011*, which are both available on the Bank's website.

2 When interest rates are at very low levels, the Bank has at its disposal a suite of extraordinary policy measures that could be used to provide additional monetary stimulus and/or improve credit market conditions. The *Framework for Conducting Monetary Policy at Low Interest Rates*, available on the Bank's website, describes these measures and the principles guiding their use.

The *Monetary Policy Report* is available on the Bank of Canada's website at **bankofcanada.ca.**

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ISSN 1201-8783 (Print)
ISSN 1490-1234 (Online)
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Monetary Policy Report

October 2016

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Global Economy

The global economy is regaining momentum. The downward revision to global growth in 2016 is mostly due to weaker-than-expected activity in the United States in the first half of the year. Looking ahead, solid domestic fundamentals should support a rebound in growth in US real gross domestic product (GDP). Globally, economic growth is projected to pick up from about 2 3/4 per cent in 2016 to about 3 1/2 per cent by 2018. Emerging-market economies (EMEs) are expected to drive this strengthening as recessions in certain countries run their course and progress is made on reforms to support growth (**Table 1**).

Weak business investment and trade remain dominant themes in the global economic outlook (**Box 1**). Global growth in investment has slowed since 2012, partly as a result of uncertainty over future prospects for global demand and ongoing structural adjustments in China.

Table 1: **Projection for global economic growth**

	Share of real global GDP[a] (per cent)	Projected growth[b] (per cent)			
		2015	2016	2017	2018
United States	16	2.6 (2.4)	1.5 (2.0)	2.1 (2.1)	2.0 (2.0)
Euro area	12	1.9 (1.6)	1.6 (1.6)	1.3 (1.2)	1.5 (1.5)
Japan	4	0.6 (0.6)	0.6 (0.5)	0.8 (0.7)	0.8 (0.8)
China	17	6.9 (6.9)	6.5 (6.4)	6.4 (6.4)	6.3 (6.3)
Oil-importing EMEs[c]	32	3.4 (3.3)	3.4 (3.4)	3.8 (4.0)	4.3 (4.4)
Rest of the world[d]	19	1.3 (1.3)	0.9 (0.9)	1.9 (2.2)	3.0 (3.1)
World	100	3.2 (3.1)	2.8 (2.9)	3.2 (3.3)	3.5 (3.5)

a. GDP shares are based on International Monetary Fund (IMF) estimates of the purchasing-power-parity valuation of country GDPs for 2015 from the IMF's October 2016 *World Economic Outlook*.

b. Numbers in parentheses are projections used in the previous Report.

c. The oil-importing emerging-market economies (EMEs) grouping excludes China. It is composed of large emerging markets from Asia, Latin America, the Middle East and Africa (such as India, Brazil and South Africa), as well as newly industrialized economies (such as South Korea).

d. "Rest of the world" is a grouping of all other economies not included in the first five regions. It is composed of oil-exporting emerging markets (such as Russia, Nigeria and Saudi Arabia) and other advanced economies (such as Canada, the United Kingdom and Australia).

Source: Bank of Canada

Box 1

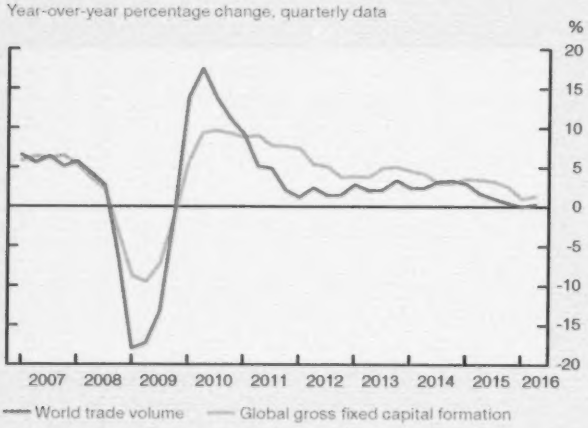
The Weakness in Global Trade

Global trade has decelerated significantly in the past six years (**Chart 1-A**). For the previous 20-plus years, global trade growth had been increasing at about twice the pace of that of GDP. This fast pace of growth was the result of a major structural shift, driven mainly by trade liberalization, including the entry of China into the World Trade Organization (WTO), and technological advances that permitted an unprecedented deepening of global value chains.[1]

This rapid and vast structural shift toward trade globalization appeared to have largely run its course in the years before the crisis and, in some respects, has gone into reverse since. Economic advances had been driving an expansion of trade, notably in emerging Asia, but their nature has changed and they are now leading to movements up the value chain and a substitution of domestic for imported inputs. In particular, over the past decade, China's manufacturing industry has been producing a widening range of products domestically, thus specializing less in assembling and processing imported inputs and reducing the importance of global supply chains.

Chart 1-A: Global trade and investment growth continue to slow

Year-over-year percentage change, quarterly data



Note: Global gross fixed capital formation is an aggregate of 48 advanced and emerging economies, accounting for 84 per cent of global GDP.

Sources: National statistical agencies, Netherlands Bureau for Economic Policy Analysis and Bank of Canada calculations Last observation: 2016Q2

In the post-crisis period, a shift toward greater protectionism also appears to have weighed on global trade growth. While the G20 leaders have consistently pledged to avoid protectionist measures since 2009, that resolve has weakened over time. According to the WTO, G20 economies have imposed a total of 1,583 trade-restrictive measures since 2009, with 145 new measures during the six months from October 2015 to mid-May 2016 alone.

The weak global economy has also been a major factor in reducing the growth of global trade. A particularly important contributor has been the sluggishness of investment, which in turn reflects a combination of structural and cyclical factors.[2] The slowdown in global investment growth—a trade-intensive component of demand—has been occurring since 2012, especially in recent quarters. Growth in private investment remains subdued across many advanced economies, particularly the United States. While investment growth should recover as demand prospects improve, it will probably be on a weaker trajectory than before the crisis.

The interconnected weakness in both trade and investment is likely an important factor in the persistent slowdown in productivity and potential output growth since the global financial crisis.

1 For additional background information, see S. S. Poloz, "The Paul Storer Memorial Lecture—Cross-Border Trade Integration and Monetary Policy," Bank of Canada Staff Discussion Paper No. 2016-20 (September 2016) and M. Francis and L. Morel, "The Slowdown in Global Trade," *Bank of Canada Review* (Spring 2015): 13–25.

2 The International Monetary Fund, *World Economic Outlook* (October 2016), Chapter 2, notes that the overall weakness in global economic activity, particularly in investment, has been the primary restraint on trade growth, accounting for up to three-quarters of the slowdown.

Global financial conditions remain accommodative

Global financial conditions have remained broadly accommodative since the July Report, reflecting, in part, monetary policies. In an environment of still-low inflation and lacklustre growth, central banks in advanced economies have maintained or further eased their policy stances.

Yields in most advanced economies remain near record lows, despite an increase in long-term government bond yields in recent weeks. These low yields have been contributing to strong portfolio inflows and easier financing conditions in many EMEs. Meanwhile, global equity prices remain near recent highs. Corporate spreads have continued to decline since the July Report, and the issuance of global corporate debt has been strong.

Markets expect a very drawn-out normalization process for the policy interest rate in the United States. This normalization will contribute to monetary policy divergence among advanced economies. As it proceeds over the projection horizon, this normalization is likely to contribute to a steepening of yield curves in global markets.

US economic growth is expected to rebound

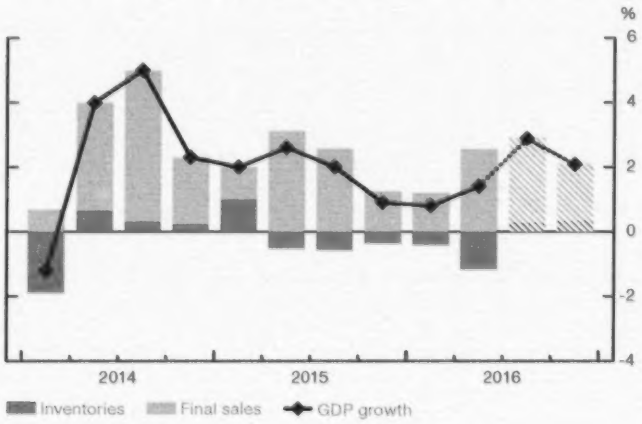
The US economy is expected to strengthen in the second half of 2016, after growing more slowly than potential in the first half. After five successive quarters of being a drag on growth, inventory investment is expected to contribute positively in the second half (**Chart 1**). In addition, business investment should regain momentum. Specifically, a rising oil rig count suggests an improvement in energy investment. Residential investment also contracted in the second quarter as the composition of housing construction shifted toward smaller homes. It is expected to resume growing, in line with demographic demand for housing. Meanwhile, consumption growth has been strong, underpinned by robust consumer confidence and a strong labour market, with ongoing robust job gains over the past several years (**Chart 2**).

Economic growth is expected to pick up to about 2 per cent on average over 2017–18, as forecast in the July Report. However, the expected composition of growth has shifted. Business investment is projected to expand at a more moderate pace than previously forecast, and the profile for residential investment is expected to be lower. Offsetting these revisions is a slightly faster pace of consumption growth. Business investment is now projected to grow about 3 per cent per year over 2017–18, in line with the anticipated recovery in aggregate demand (**Box 2**). Growth in exports should also pick up as the drag associated with the past appreciation of the US dollar continues to dissipate.

Core PCE (personal consumption expenditure) inflation has risen from its recent trough of 1.4 per cent in the fourth quarter of 2015 and is projected to reach 2 per cent by 2018, as wage pressures rise and the disinflationary effects of the past exchange rate appreciation ease.

Chart 1: Final sales indicate underlying momentum in the US economy

Contributions to quarter-over-quarter annualized real GDP growth, quarterly data

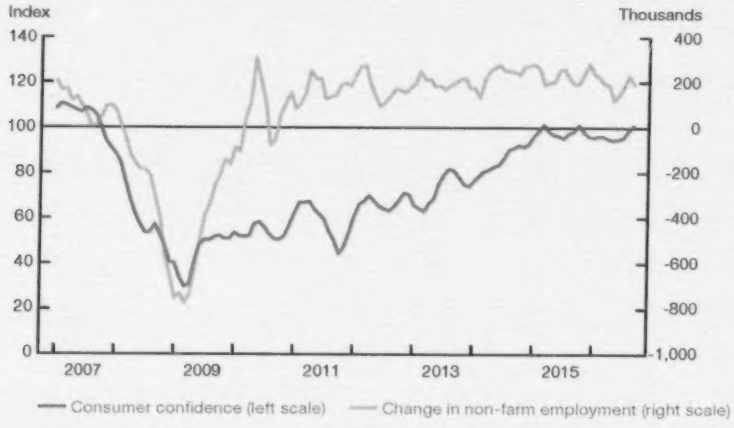


Sources: US Bureau of Economic Analysis and Bank of Canada estimates and projections

Last data plotted: 2016Q4

Chart 2: US consumer confidence has recovered as employment expands

3-month moving average; index: 1985 = 100



Sources: US Conference Board and US Bureau of Labor Statistics via Haver Analytics

Last observation: September 2016

Box 2

Understanding Weak US Business Investment

US business investment has been a drag on growth, having contracted by an average of 2 per cent over the past three quarters. Some of this drag was anticipated, given the sharp downturn in energy sector investment, which in turn reduced investment by industrial suppliers, such as oil-field equipment producers and their upstream suppliers. More unexpected was the softness seen outside of the energy sector (Chart 2-A). This broader weakness likely reflects a combination of both temporary factors and longer-term trends.

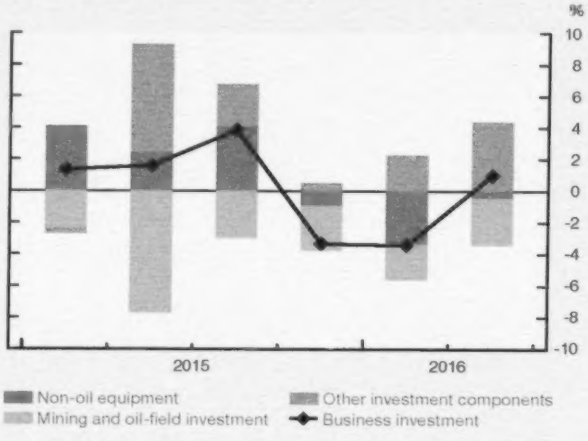
Transitory factors include the past appreciation of the US dollar, which has curbed exporters' investment plans, and economic and political uncertainty, which may have led businesses to delay key investment decisions.[1] In coming months, the effects of these temporary headwinds should diminish and energy investment is expected to stabilize. As a result, investment growth is anticipated to rebound in 2017.

Longer-term trends will, however, moderate the pickup in investment growth. After cyclical factors have dissipated, growth in business investment will be determined by structural factors. As documented in the April Report, these structural factors are less favourable than in the past: the Bank's current estimate of potential output growth is about 1 percentage point lower than its average over the past 25 years, since demographic factors are weighing on labour input and growth in productivity has been relatively slow. These trends imply weaker future demand and less need for businesses to invest.

Given these factors, the Bank now expects growth in US business investment to average around 3 per cent over 2017–18, down from 4 per cent in the July Report. This has important implications for Canadian exports, given the trade-intensive nature of investment.

Chart 2-A: Weakness in US business investment is broad-based

Contributions to quarter-over-quarter annualized business investment growth



Note: Other investment components include non-oil structures and intellectual property products.

Sources: US Bureau of Economic Analysis via Haver Analytics and Bank of Canada calculations

Last observation: 2016Q2

1 For more on this topic, see M. Leboeuf and R. Fay, "What Is Behind the Weakness in Global Investment?" Bank of Canada Staff Discussion Paper No. 2016-5 (February 2016).

Growth prospects in other advanced economies remain modest

The wider economic and geopolitical consequences of the United Kingdom's decision to exit the European Union (Brexit) continue to be difficult to forecast. The initial confidence effects associated with Brexit appear to have weighed less heavily on global economic activity than expected in July. The euro area, in particular, has been more resilient than anticipated, as illustrated by the strength in soft indicators, such as Purchasing Managers' Indexes and measures of economic sentiment.

In Japan, the recently announced fiscal stimulus should provide a modest boost to growth over the remainder of this year and throughout 2017. In addition, the Bank of Japan (BoJ) has introduced two major components into its monetary policy framework: "yield curve control," in which the BoJ will seek to control both short- and long-term interest rates; and an "inflation-overshooting commitment," in which the BoJ commits to expand the monetary base until consumer price inflation exceeds the 2 per cent target and remains stable above the target.

Emerging markets continue to drive global growth, but they face challenges

Growth in China is projected to slow gradually to 6.3 per cent by 2018. Previously announced fiscal support and rapid credit expansion appear to be boosting growth in spending on infrastructure and in the housing sector. While these developments are helping to replace some lost demand from slowing investment in mining and manufacturing industries, they may exacerbate financial vulnerabilities by increasing leverage, particularly in unprofitable state-owned enterprises.

In oil-importing EMEs, the associated drag on growth will wane as recessions in some countries, including Brazil, reach their troughs. Economic growth should also be supported by progress on growth-enhancing initiatives, such as major tax reforms in India and a pledge by Indonesian authorities to ramp up spending on infrastructure projects. The overall growth profile, however, has been marked down since July because weak global investment and the strengthening currencies of major EMEs are expected to restrain export growth.

The Bank continues to expect growth in the rest of the world to strengthen over the projection horizon as the ongoing adjustment to low oil prices in oil-exporting EMEs progresses.

Commodity prices have remained relatively stable

Global oil price benchmarks have been fluctuating near levels assumed in the July Report. Prices for Western Canada Select—one of the main pricing benchmarks for Western Canadian producers—have been slightly lower, on average, mainly because of the resolution of production outages in Alberta. By convention, the Bank assumes that oil prices will remain near their recent average levels: about US$48, US$46 and US$32 for Brent, West Texas Intermediate and Western Canada Select, respectively (see **Box 3** on page 8).

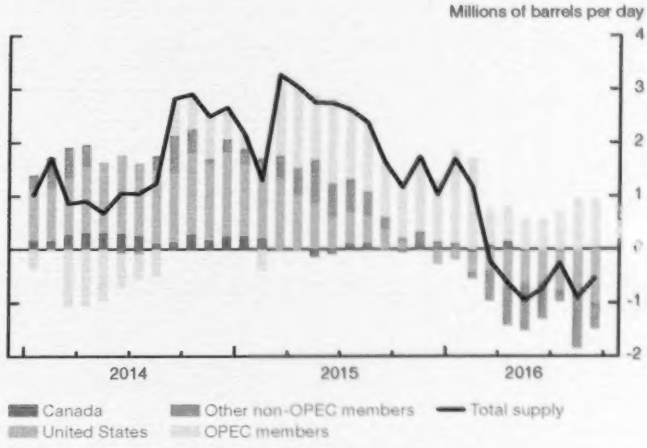
Recent developments, including the production target proposed by the Organization of the Petroleum Exporting Countries (OPEC), have influenced oil price movements, but have not materially changed the Bank's view on

the pace of rebalancing in the oil market. In response to lower oil prices over the past two years, the supply adjustment is progressing (**Chart 3**). In this context, risks to the Bank's oil price assumption remain tilted to the upside over 2017–18: solid demand growth is expected to continue, while supply growth will be constrained by the deep cuts to capital investment over the past two years and the lag between oil investment and production.

The Bank of Canada's non-energy commodity price index is modestly lower than it was at the time of the July Report, driven mainly by weaker agricultural prices. Looking ahead, this index should remain near its current level, with movements in prices of different commodity components offsetting each other. A modest decline in metal prices is expected, reflecting slower growth in both investment and production in commodity-intensive industries in China, combined with strong supply growth from previously built mines in other countries. In contrast, lumber prices should remain elevated, with support from strong growth in the US housing market.

Chart 3: **Global crude oil production has declined in 2016**

Year-over-year change



Note: OPEC refers to the Organization of the Petroleum Exporting Countries.

Sources: International Energy Agency and Bank of Canada calculations Last observation: September 2016

Canadian Economy

The adjustment of the Canadian economy to low commodity prices is progressing against a backdrop of weak but improving global demand. The drag from declining investment spending in the energy sector is waning, and there are early indications that economic activity in resource-related sectors may be bottoming out. The broader economic impact of lower real incomes from the commodity price decline is nonetheless expected to continue to dampen domestic demand for some time as this difficult adjustment proceeds. Meanwhile, activity outside resource sectors is growing at a solid pace, driven by an expanding service sector and supported by the past depreciation of the Canadian dollar. At the same time, subdued foreign demand and persistent competitiveness challenges are restraining the pace of export growth.

Real GDP is expected to grow at a rate above that of potential output, starting in the second half of 2016 (**Box 3**). Economic activity is supported by accommodative monetary and financial conditions and fiscal measures (**Table 2**). The forecast for real GDP growth has been revised down since the July Report, primarily because of a weaker outlook for exports and the housing market. The output gap is now expected to close around mid-2018, materially later than anticipated in July.

Table 2: **Contributions to average annual real GDP growth**
Percentage points[a, b]

	2015	2016	2017	2018
Consumption	1.1 (1.1)	1.3 (1.1)	1.2 (1.1)	1.2 (1.1)
Housing	0.3 (0.3)	0.2 (0.3)	-0.2 (0.1)	0.1 (0.0)
Government	0.4 (0.4)	0.4 (0.4)	0.7 (0.6)	-0.1 (0.0)
Business fixed investment	-1.4 (-1.4)	-0.8 (-0.9)	0.2 (0.2)	0.4 (0.5)
Subtotal: Final domestic demand	0.4 (0.4)	1.1 (0.9)	1.9 (2.0)	1.6 (1.6)
Exports	1.1 (1.1)	0.2 (0.3)	0.8 (1.1)	1.0 (1.3)
Imports	-0.1 (-0.1)	0.4 (0.5)	-0.9 (-1.1)	-0.5 (-0.8)
Subtotal: Net exports	1.0 (1.0)	0.6 (0.8)	-0.1 (0.0)	0.5 (0.5)
Inventories	-0.3 (-0.3)	-0.6 (-0.4)	0.2 (0.2)	0.0 (0.0)
GDP	1.1 (1.1)	1.1 (1.3)	2.0 (2.2)	2.1 (2.1)
Memo items:				
Range for potential output	1.4–1.8 (1.4–1.8)	1.2–1.8 (1.2–1.8)	1.0–2.0 (1.0–2.0)	0.9–2.1 (0.9–2.1)
Real gross domestic income (GDI)	-1.2 (-1.2)	0.3 (0.6)	2.1 (2.9)	2.1 (2.0)
Total CPI (year-over-year percentage change)	1.1 (1.1)	1.5 (1.6)	1.9 (2.1)	1.9 (2.0)

a. Numbers in parentheses are from the projection in the previous Report.
b. Numbers may not add to total because of rounding.

Box 3

Key Inputs to the Base-Case Projection

The Bank's projection is always conditioned on several key assumptions, and changes to these assumptions will have important effects on the outlook for the global and Canadian economies. The Bank regularly reviews these assumptions and assesses the sensitivity of the economic projection to them.

The first assumption is that oil prices will remain near their recent average levels. The per-barrel prices in US dollars for Brent, West Texas Intermediate and Western Canada Select have recently averaged about $48, $46 and $32, respectively. The profile for these prices is broadly in line with that assumed in the July Report.

By convention, the Bank does not attempt to forecast the exchange rate in the base-case projection. Therefore, the second assumption is that the Canadian dollar will remain close to its recent average of 76 cents over the projection horizon. The Canadian dollar has changed little since the July Report, partly because of the relative stability of commodity prices.

The third assumption is that the output gap is -1.5 per cent, the midpoint of a range of 1 to 2 per cent, which is the Bank's estimate of excess capacity in the Canadian economy in the third quarter of 2016. This assumption compares with the July assumption of an output gap of -1.7 per cent for the second quarter.

The fourth assumption is that Canadian potential output growth will be at the midpoint of the Bank's estimated range, unchanged from July (**Table 2**). Further details on the Bank's assessment of potential output are provided in the Appendix to the April Report.

The Bank's fifth assumption involves the neutral nominal policy rate in Canada, estimated to be between 2.75 per cent and 3.75 per cent. The current projection is based on the midpoint of this range, which is unchanged from the July assumption.

The Bank expects inflation to be close to 2 per cent from early 2017 onward, when temporary factors will have dissipated and as economic slack is absorbed.

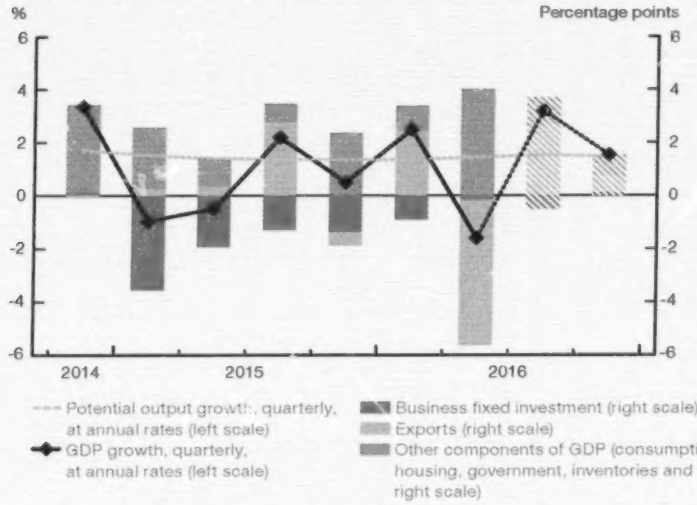
Economic growth has resumed

The Canadian economy contracted by 1.6 per cent (at an annualized rate) in the second quarter of 2016 (**Chart 4**). Growth was pulled down by a large, broad-based decline in goods exports and the impact of the Alberta wildfires, which more than offset the strength in household expenditures and government spending. Weak exports of non-commodity goods can be linked, in part, to tepid foreign demand. US business investment has been very soft over the past three quarters, and activity in the US manufacturing sector—an important market for Canadian exports of intermediate goods—has grown slowly. Past declines in commodity prices, coupled with production disruptions, have also contributed to the weakness in commodity exports.

The economy is on track for a rebound in the second half of the year, reflecting improving exports, a return to full oil sands production and the rebuilding activity in Alberta. Real GDP increased in July across a number of industries, particularly non-conventional oil production. Goods exports posted gains in July and August, following a sharp contraction over the previous five months, but not enough to make up for previously lost ground. Looking through volatility in the data, service exports have steadily improved, but the level of goods exports has only returned to where it was a year ago (**Chart 5**). Underpinned by a pickup in the US economy, exports are expected to continue recovering.

Chart 4: The Canadian economy contracted in the second quarter but is expected to rebound

Contribution to real GDP growth, quarterly data



Sources: Statistics Canada and Bank of Canada estimates and calculations — Last data plotted: 2016Q4

Chart 5: Goods exports experienced a setback, while exports of services continue to grow steadily

Chained 2007 dollars, monthly data for goods and quarterly data for services

Sources: Statistics Canada and Bank of Canada calculations — Last observations: Goods, August 2016; services, 2016Q2

In addition, the rollout of the Canada Child Benefit is anticipated to start providing additional support to household spending in the second half of 2016, and the federal infrastructure spending announced in March as part of Budget 2016 should begin to have a more material impact. However, the recently introduced federal measures to promote stability in the housing market are expected to start dampening resale activity in the near term.

Average growth over the third and fourth quarters of 2016 is expected to be about 2 1/2 per cent (**Table 3**). This is lower than anticipated in the July Report, reflecting a downward revision to exports, a pullback in housing activity and a shift in the timing of the implementation of federal infrastructure measures that pushes some of the impact into 2017.

Table 3: Summary of the projection for Canada
Year-over-year percentage change[a, b]

	2016				2015	2016	2017	2018
	Q1	Q2	Q3	Q4	Q4	Q4	Q4	Q4
Total CPI	1.6 (1.6)	1.5 (1.6)	1.3 (1.5)	1.7 (1.8)	1.3 (1.3)	1.7 (1.8)	1.9 (2.1)	2.0 (2.1)
Core inflation (CPIX)	2.0 (2.0)	2.1 (2.1)	1.9 (2.0)	1.9 (2.0)	2.0 (2.0)	1.9 (2.0)	1.7 (2.0)	2.0 (2.1)
Real GDP	1.2 (1.1)	0.9 (1.0)	1.1 (1.3)	1.4 (1.9)	0.3 (0.3)	1.4 (1.9)	2.2 (2.1)	2.2 (2.2)
Quarter-over-quarter percentage change at annual rates	2.5 (2.4)	-1.6 (-1.0)	3.2 (3.5)	1.5 (2.8)				

a. Numbers in parentheses are from the projection in the previous Report. Assumptions for the price of crude oil are based on a recent average of spot prices.

b. This table shows the last two quarters of historical data and the projections for the next two quarters, as well as fourth-quarter-over-fourth-quarter projections of real GDP growth and inflation for longer horizons.

Economic slack continues to put downward pressure on inflation

Estimates from the Bank's two measures of economic slack (the structural and statistical approaches) point to material excess capacity.[1] Responses to the Bank's autumn *Business Outlook Survey* indicate that pressures on production capacity are little changed and remain below their long-term average.

Statistics Canada's Labour Force Survey and the Survey of Employment, Payrolls and Hours, together with interprovincial migration data, continue to provide evidence of ongoing adjustment in labour markets to the past decline in commodity prices: employment is weak in energy-intensive regions and labour continues to migrate out of Alberta. In contrast, employment gains in the service sector, particularly in Ontario, British Columbia and Quebec, have been strong over the past year, and Ontario and British Columbia have seen provincial in-migration. Overall, the national labour market has been resilient.

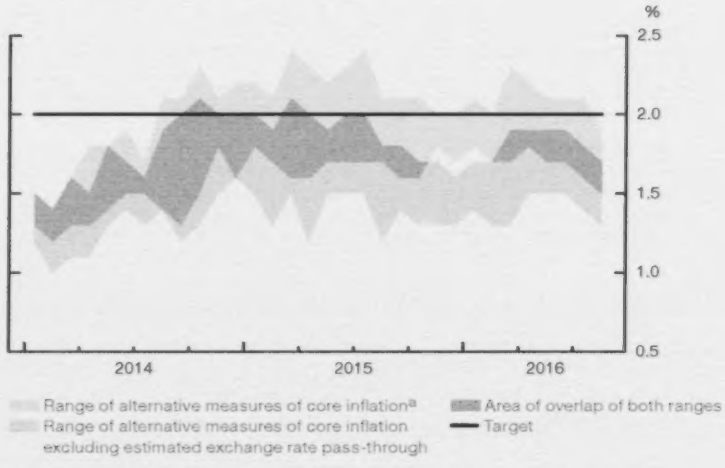
Taking a range of measures into account, the Bank's labour market indicator has edged up and shows that there continues to be more economic slack than the national unemployment rate would suggest. The Bank judges that excess capacity in the economy in the third quarter was between 1 and 2 per cent.

Total CPI inflation remains in the lower half of the Bank's inflation-control range, with the temporary boost from the pass-through of the earlier exchange rate depreciation more than offset by downward pressures from low consumer energy prices and persistent excess capacity. Total inflation eased from 1.3 per cent in July to 1.1 per cent in August. This latest reading

1 In the third quarter, the Bank's structural (integrated framework) estimate of the output gap is -2.2 per cent, and the statistical (extended multivariate filter) estimate is -1.1 per cent. The time series of these two measures can be found at Statistics > Indicators > Indicators of Capacity and Inflation Pressures for Canada on the Bank's website.

Chart 6: **Measures of core inflation have eased somewhat**

Year-over-year percentage change, monthly data



a. Measures are CPIX; MEANSTD; the weighted median; CPIW; CPI excluding food, energy and the effect of changes in indirect taxes; and the common component. For definitions, see Statistics > Indicators > Indicators of Capacity and Inflation Pressures for Canada > Inflation on the Bank of Canada's website.

Sources: Statistics Canada and Bank of Canada calculations Last observation: August 2016

was weaker than anticipated, reflecting lower inflation for food and gasoline, as well as sector-specific shocks to telecommunications prices. Total CPI inflation is expected to move up over the coming months as gasoline prices exert less downward pressure.

Most measures of core inflation remain close to 2 per cent but have eased somewhat since the July Report. Without the impact of exchange rate pass-through, these measures would be somewhat lower, reflecting disinflationary pressures associated with ongoing economic slack (**Chart 6**).

The drag on growth from the commodity price decline is waning

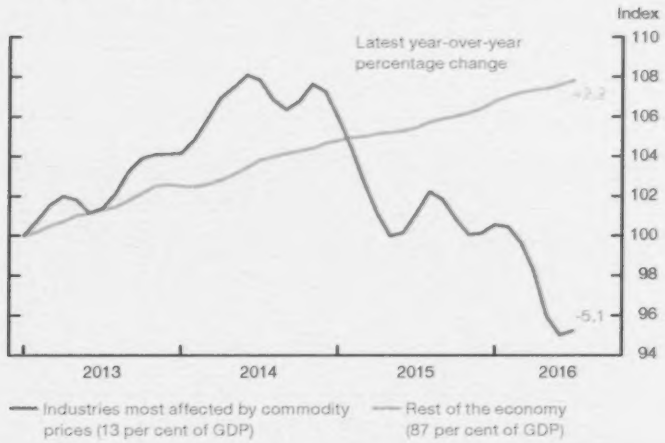
The adjustment in industries most affected by commodity prices is well under way, and activity in the rest of the economy is expanding solidly (**Chart 7**). In response to persistently lower prices, oil firms have been cutting capital expenditures and reducing labour. The investment cuts are expected to diminish toward the end of 2016, leaving investment in the oil and gas sector about 60 per cent below its level in 2014. The autumn *Business Outlook Survey* found that many businesses believe resource-related activity may be bottoming out. Resource-related firms generally expect sales to level off at this new lower level or to increase modestly over the next 12 months.

An integral part of the economy's adjustment to the commodity price shock is the relatively solid growth in the service sector, which is supporting job creation, incomes and domestic demand (**Box 4**). Moreover, *Business Outlook Survey* responses indicate that the balance of opinion on firms' assessments of the impact of the lower Canadian dollar and weaker commodity prices on their business outlook has shifted from very negative to positive over the past five quarters (**Chart 8**).

Real GDP is projected to grow by 1.1 per cent in 2016 and about 2 per cent in 2017 and 2018 (**Table 2** and **Table 3**). The Bank expects solid household spending to continue to be the main contributor to growth, with additional support from government spending and exports in 2017. The contribution from business investment is anticipated to turn positive by the start of 2017 and to subsequently increase.

Chart 7: **Activity outside industries most affected by commodity prices has continued to expand**

3-month moving average; index: January 2013 = 100, monthly data

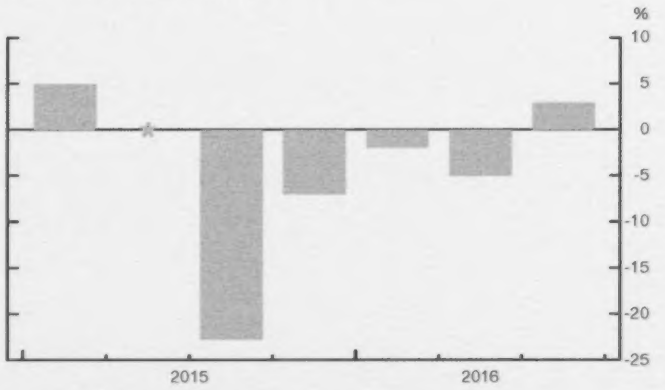


Note: Industries most affected by commodity prices include mining, oil and gas; engineering and non-residential construction; and related professional services. Numbers in parentheses indicate 2012 nominal shares of GDP.

Sources: Statistics Canada and Bank of Canada calculations Last observation: July 2016

Chart 8: **Firms' assessments of the impact of lower oil prices and the lower dollar have turned positive**

Balance of opinion[a] quarterly data



* Indicates a balance of opinion of zero

a. Percentage of firms in the *Business Outlook Survey* reporting that the environment of lower oil prices and the lower dollar is favourable for them minus the percentage of firms reporting that it is unfavourable

Source: Bank of Canada Last observation: 2016Q3

Box 4

Canada's Service Sector Is Driving Economic Growth

The service sector makes an important contribution to overall economic growth: it accounts for about 70 per cent of the economy and four out of every five jobs. As the economy adjusts to low commodity prices, Canada's service sector has continued to expand at a steady pace, while growth in the goods sector has slowed markedly. Service sector exports have increased steadily, particularly commercial and travel services. Following years of stable growth, service exports as a share of total exports are now about equal to exports of motor vehicles and parts and exceed energy exports.

Although some service industries closely tied to oil exploration activity, such as architectural and engineering services, have seen activity contract sharply, many businesses in other service industries have continued to show strength (Chart 4-A). A number of small industries have been particularly fast-growing, including air transportation, financial investment services, motion picture and sound recording, and computer systems design and other information services.

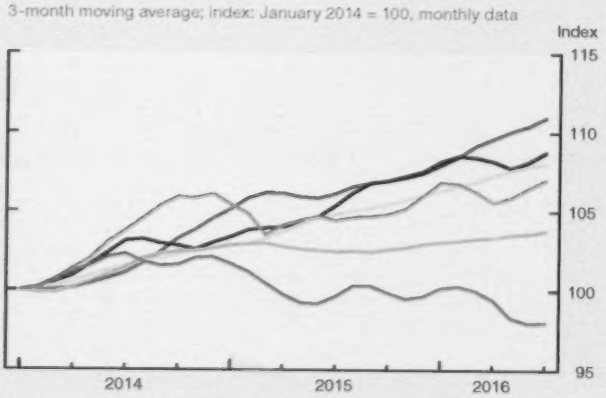
The contribution of the service sector to overall economic activity is reflected in job gains, wages and income growth. Nearly 250,000 jobs have been created in the service sector since the end of 2014, while jobs in the goods sector declined by about 70,000. Employment in information, culture and recreation services has trended strongly upward; job gains in accommodation services have almost erased the losses that followed the collapse of commodity prices; and job growth in finance, insurance and real estate has been steady. While the average wage in service industries remains lower than that in goods industries, most of the increase in employment since the latter part of 2014 has been in service industries that pay above-average wages.

Income generated in the service sector has contributed to the resilience in national income and has supported domestic demand more broadly. Income growth among service sector workers has more than offset the declines in the goods sector, keeping overall income growth firmly in positive territory (Chart 4-B).

The Bank recently consulted with export-oriented firms in the information technology service industry—a small but dynamic segment of the service sector with ties to many other industries, given the accelerating global trend toward digitalization. Firms that operate in these industries tend to be very positive about their outlook for sales and see significant benefits from the weaker Canadian dollar. These firms reported strong intentions to invest in hiring and research and development.

Chart 4-A: Selected service industries have outperformed goods industries

3-month moving average; index: January 2014 = 100, monthly data



- Goods-producing industries (30%)
- Professional, scientific and technical services (5.7%)
- Wholesale trade (5.4%)
- Real estate and rental and leasing (12.3%)
- Transportation and warehousing (4.2%)
- Finance and insurance services (6.1%)

Note: Numbers in parentheses indicate 2012 nominal shares of GDP.

Sources: Statistics Canada and Bank of Canada calculations

Last observation: July 2016

Chart 4-B: Income growth in service industries has been markedly stronger than in goods industries

Year-over-year percentage change, monthly data

- Goods-producing industries
- Services-producing industries
- Total wages and salaries

Note: Income does not include social contributions of employers.

Source: Statistics Canada

Last observation: June 2016

Exports and investment are expected to grow at a moderate pace

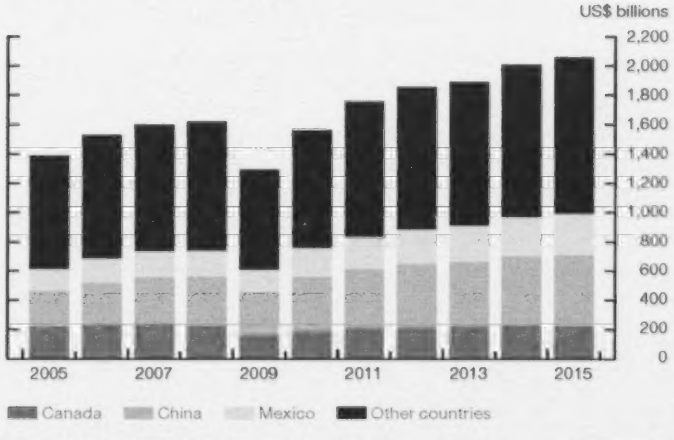
Exports are expected to pick up and grow at a moderate pace over the projection horizon as foreign demand improves. Together with services exports, several goods components, such as aircraft and related parts and pharmaceutical and medicinal products, are expected to lead the recovery in non-commodity exports. In addition, Canadian oil production and exports are expected to post gains over the projection horizon, although the declines in energy sector investment that followed the oil price shock will restrain the pace of growth over the next two years. In the non-energy commodity sector, there could be downside risks to Canadian lumber exports, if the United States imposes countervailing duties following the expiration of the Softwood Lumber Agreement.

The average rate of growth projected for exports over 2017 and 2018 is lower than anticipated in July. The projection for US economic activity now has slower business investment growth and a lower track for residential investment, reflecting the trend to smaller houses. In addition, the persistent weakness in Canadian non-commodity goods exports this year suggests that competitiveness challenges will be more pronounced than previously anticipated. The downward revision to exports, including spillovers to domestic demand and imports, lowers real GDP by 0.6 per cent by the end of 2018.

One issue that appears to be more important than previously assessed is the competitiveness of Canada against other countries in the US market. US non-energy goods imports from Canada have stagnated, while those from competing countries have increased (**Chart 9**). The foreign exchange value of the Canadian dollar is one relevant factor: although the Canadian dollar depreciated against the US dollar in recent years, which improved Canada's export competitiveness, competitors for US market share have also experienced currency depreciations, in some cases by more than that for the Canadian dollar. The Mexican peso, for example, has fallen by over 30 per cent against the US dollar since mid-2014, compared with less than

Chart 9: US non-energy goods imports from Canada have stagnated relative to those from other countries

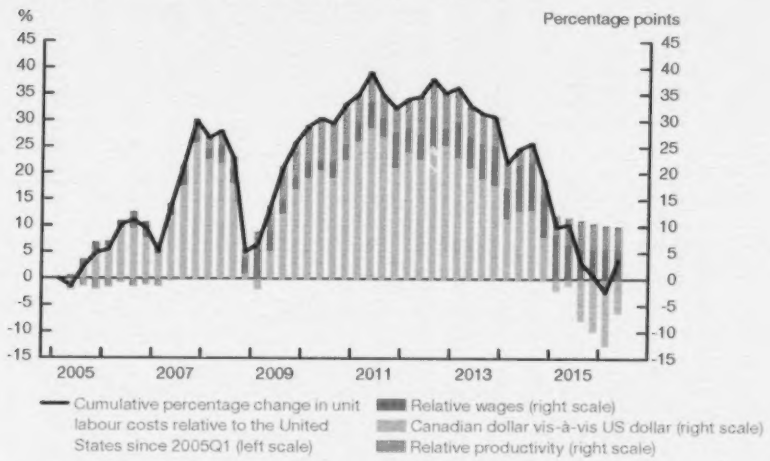
Nominal US imports by country, annual data



Sources: US Census Bureau, Haver Analytics and Bank of Canada calculations Last observation: 2015

Chart 10: Relative productivity and labour costs continue to work against competitiveness, despite a lower Canadian dollar

Contribution of various factors to the changes in unit labour costs in Canada's business sector relative to those in the United States, quarterly data



Sources: Statistics Canada, US Bureau of Economic Analysis and Bank of Canada calculations

Last data plotted: 2016Q2

20 per cent for the Canadian dollar. The Canadian-dollar exchange rate will continue to support the level of exports, although most of the impact on the growth rate has likely already occurred.

Other factors, such as energy cost differentials, rising non-tariff trade barriers, uncertainty about the status of current and future trade agreements, and slow and complex project approval processes, may also be impeding Canada's ability to benefit from an improving global outlook. These factors also affect firms' choice of location for production: exporting firms have been able to respond to increases in export demand through their foreign facilities located close to the source of demand rather than exclusively through Canadian exports. In this context, persistent productivity underperformance and stronger relative wage gains in Canada have been working to gradually erode the competitiveness of Canadian exports, despite the depreciation of the Canadian dollar in recent years (**Chart 10**).

The outlook for exports remains subject to considerable uncertainty, which has significant implications for the economic projection. For example, growth in exports that is 1 percentage point weaker than expected in both 2017 and 2018 could lower the level of real GDP by as much as 0.5 per cent by the end of the projection horizon.[2] In this simulation as well as in the base-case projection, the direct impact of weaker exports on GDP is mitigated by the fewer imports needed as inputs into exports.

While the weaker profile for exports in the base-case projection will translate into somewhat softer business investment, growth in investment is expected to turn positive in 2017 and to gradually pick up over the projection horizon. The autumn *Business Outlook Survey* results show that more firms than in recent surveys plan to increase investment over the next 12 months. Plans to increase investment are more widespread among service-oriented firms

2 The point estimate in this simulation assumes no monetary policy response.

and often involve smaller-scale expenditures on information technology. Intentions to increase investment remain weak among firms in the more investment-intensive manufacturing sector. As exports increase and more firms start to face capacity constraints, investment in the non-commodity sector is still expected to rise.

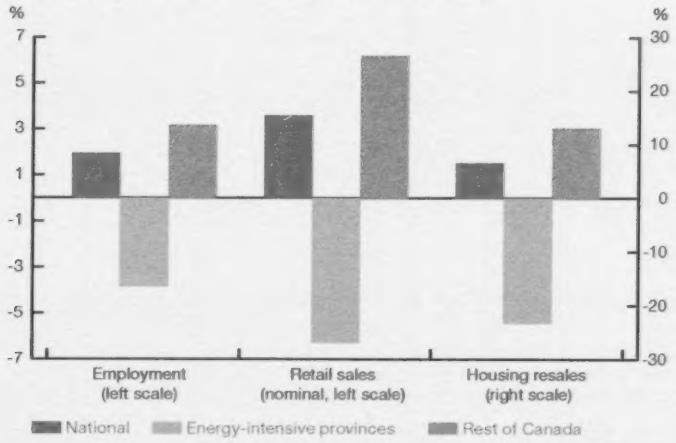
Household spending is expected to remain solid, supported by fiscal measures

National growth in household spending has held up as employment and income have continued to rise outside the energy-intensive provinces (**Chart 11**). While the negative wealth and income effects from the past decline in Canada's terms of trade will continue to restrain household spending, accommodative monetary policy is an ongoing source of support. Consumption should continue to grow at a healthy pace, with government transfers providing a boost in the near term and the adverse impact of the past deterioration of the terms of trade slowly dissipating.

Residential investment was strong in the first half of 2016, particularly in the housing markets in British Columbia and Ontario. A slowdown in resale activity in British Columbia that began in May intensified in August. An additional property transfer tax for foreign buyers in the Greater Vancouver Regional District was also introduced in August. Nonetheless, prices in Vancouver remain elevated, and resale activity and housing starts continue to be robust in the Greater Toronto Area. The recently announced federal measures to promote stability in the housing market are expected to lead to weaker resale activity in the near term and a modest change in the composition of residential construction toward smaller units. These measures leave

Chart 11: **National household spending growth has held up despite weakness in energy-intensive provinces**

Percentage change since November 2014, monthly data



Note: The energy-intensive provinces are Alberta, Saskatchewan and Newfoundland and Labrador.

Sources: Statistics Canada and Bank of Canada calculations

Last observations: Employment and retail sales, July 2016; housing resales, September 2016

the level of real GDP 0.3 per cent lower at the end of 2018.[3] In line with these changes, the contribution of residential investment to real GDP growth is expected to be lower on average than anticipated in July. While household indebtedness has continued to increase, the new measures are expected to dampen household vulnerabilities over time, in part, by improving the average credit quality of new borrowing.

Fiscal stimulus will be an important contributor to GDP growth, with household transfers and infrastructure measures having an overall impact of 1 per cent on the level of GDP by the end of the 2017–18 fiscal year.[4]

Inflation is expected to move close to 2 per cent

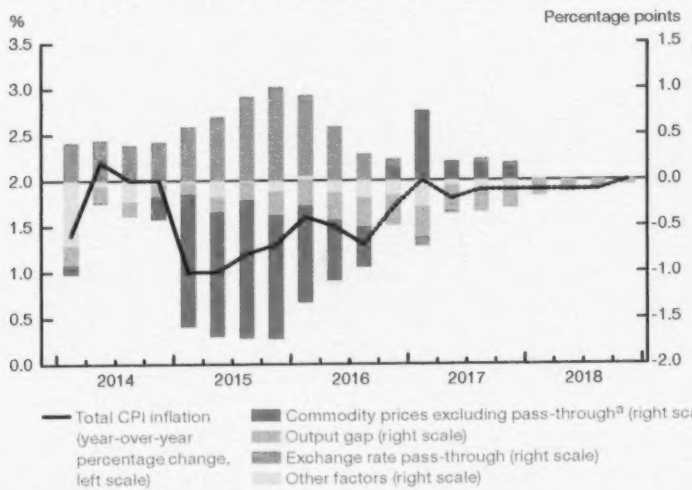
The disinflationary effect of low consumer energy prices and the inflationary effect of exchange rate pass-through are expected to largely dissipate by the end of 2016. Total inflation is expected to be close to 2 per cent in 2017 and 2018. Remaining excess capacity will continue to be a source of modest disinflationary pressure through 2017 and into 2018 (**Chart 12**).

The profile for inflation is slightly lower than expected in July, since in the base-case projection the output gap is now somewhat wider and is expected to close later than previously anticipated.

Inflation expectations remain well anchored. The October Consensus Economics forecast for total CPI inflation was 1.5 per cent for 2016 and 2.1 per cent for 2017. A semi-annual question on long-term inflation

Chart 12: Total CPI inflation is expected to be close to 2 per cent

Contribution to the deviation of inflation from 2 per cent



a. Also includes the effect on inflation of the divergence from the typical relationship between gasoline and crude oil prices, the introduction of the cap-and-trade plan in Ontario and the Alberta carbon levy

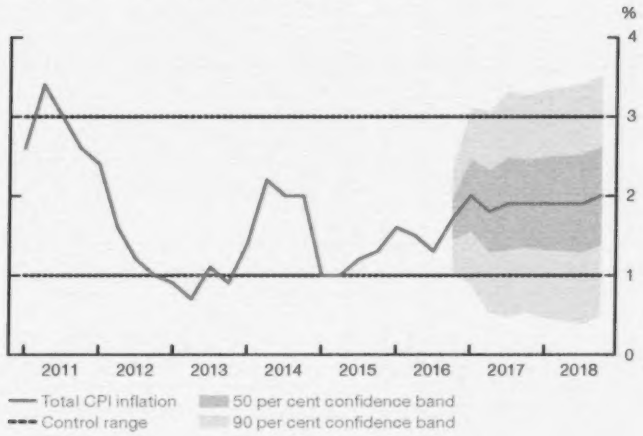
Sources: Statistics Canada and Bank of Canada estimates, calculations and projections

3 The Bank's estimate of the effects of the measures incorporates model simulations as well as the historical experience following changes to housing regulations and is driven by weaker residential investment and spillover effects to income and consumption. It is important to note that there is considerable uncertainty around the overall impact of these new measures on the economy.

4 The overall impact of the fiscal stimulus is unchanged from estimates provided in the April Report.

Chart 13: **Inflation confidence bands are centred on 2 per cent over the projection horizon**

Year-over-year percentage change, quarterly data



Sources: Statistics Canada and Bank of Canada calculations and projections

expectations shows inflation averaging 2 per cent through 2025. Results from the Bank's autumn *Business Outlook Survey* indicate that firms' expectations for inflation over the next two years remain within the Bank's 1 to 3 per cent inflation-control range.

Based on the past dispersion of private sector forecasts, a reasonable range around the base-case projection for total CPI inflation is ±0.3 percentage points. This range is intended to convey a sense of forecast uncertainty. A fan chart, which is derived using statistical analysis of the Bank's forecast errors, provides a complementary perspective (**Chart 13**).

Risks to the Inflation Outlook

With this Report, the content and format of the Risks section have been revised. More information is provided on developments related to risks—both what has happened since the previous Report and what is being monitored in the near term. This information highlights the indicators being monitored but is not necessarily comprehensive. It will help clarify the Bank's assessment of when a risk may be receding and will likely be dropped in a future Report; when a risk may become less important because aspects of it may be materializing, leading to a revision to the economic projection; or when the nature of a risk may be changing, for example, from being one- to two-sided. The evolution of the risks since the previous Report is summarized in **Table 4**.

The outlook for inflation is subject to several upside and downside risks emanating from both the external environment and the domestic economy. Overall, the Bank assesses that the risks to the projected path for inflation are roughly balanced. As in past reports, the focus is on a selection of risks identified as the most important for the projected path for inflation, drawing from a larger set of risks taken into account in the projection.

(i) Stronger real GDP growth in the United States

The Bank's projection for US potential GDP growth could reflect an overly conservative interpretation of labour market and productivity trends. In addition, global uncertainty has increased recently, exacerbated by heightened political uncertainty and rising protectionist sentiment. Either favourable dissipation of this uncertainty or stronger growth in the structural drivers of the US economy could result in improved US business confidence and investment, with positive spillovers for Canadian exports.

(ii) Higher oil prices

Strengthening demand, as well as supply constraints, could contribute to higher oil prices. Higher-than-expected oil prices would improve Canada's terms of trade and provide a boost to wealth and household spending in Canada.

(iii) Sluggish business investment in Canada

The recent weakness in business investment could reflect more persistent structural factors. Over time, weaker business investment would also reduce capital deepening and lower potential output, partially mitigating the disinflationary effect of weaker demand.

(iv) Slower growth in emerging-market economies

Growth could be slower in some EMEs, particularly commodity exporters and those with elevated US-dollar-denominated debt. There are risks around China's rebalancing, particularly given a further buildup of financial imbalances. Slower EME growth could affect Canada through weaker commodity prices and export sales, as well as through greater global uncertainty and financial volatility.

(v) Weaker household spending

Given the high level of household indebtedness, households may also become more prudent, restraining consumption and housing expenditures. Weaker-than-expected household spending would have a direct negative impact on real GDP.

Table 4: **Evolution of risks since the July *Monetary Policy Report***

Risk	What has happened	What is being monitored
Stronger real GDP growth in the United States	▪ Continued weak productivity growth ▪ More political uncertainty and rising protectionist sentiment in the United States ▪ A recent soft patch in demand from US clients of Canadian businesses ▪ A rebound in growth in the United States after a weak second quarter	▪ US firm creation, investment and industrial production ▪ US labour force participation rate ▪ US business and consumer confidence
Higher oil prices	▪ OPEC[a] proposal for an oil production target ▪ Rising US rig counts and elevated inventories	▪ Indicators of future oil supply, including investment intentions in the energy sector
Sluggish business investment in Canada	▪ Increase in global sources of uncertainty ▪ Persistent weakness in Canadian exports ▪ Manufacturing investment intentions remain weak	▪ US business investment and other sources of demand for Canadian exports ▪ Indicators of investment intentions and business sentiment of Canadian firms
Slower growth in emerging-market economies (EMEs)	▪ Slower-than-expected growth in Brazil and Russia ▪ Downward revision in the economic outlook for oil-importing EMEs and the rest of world	▪ Capital outflows from EMEs ▪ Adjustment pressures on commodity producers ▪ Financial imbalances in China ▪ Global financial volatility
Weaker household spending	▪ Subdued sentiment in energy-intensive provinces ▪ Continued rise in household indebtedness ▪ Rollout of Canada Child Benefit payments ▪ Federal measures to promote stability in the housing market	▪ Indicators of household spending ▪ Consumer sentiment ▪ Housing activity ▪ Household indebtedness and savings behaviour

a. OPEC refers to the Organization of the Petroleum Exporting Countries.